APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/680,709	10/06/2000	Raghavan Anand	2-17-16	2111

7590   05/09/2003

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EXAMINER
RAO, ANAND SHASHIKANT

ART UNIT	PAPER NUMBER
2613	6

DATE MAILED: 05/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

	Application No.	Applicant(s)
Office Action Summary	09/680,709	ANAND ET AL.
	Examiner	Art Unit
	Andy S. Rao	2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1.   The specification has not been checked to the extent necessary to determine the presence

of all possible minor errors. Applicant's cooperation is requested in correcting any errors of

which applicant may become aware in the specification.

Claim Objections

2.   Claims 1-20 are objected to because of the following informalities:

A. Claim 1, line 15, "on one of more of…" should be "on one or more of…".

B. Claim 10, line 14, "on one of more of…" should be "on one or more of…".

C. Claim 19, line 15, "on one of more of…" should be "on one or more of…".

D. Claim 20, line 16, "on one of more of…" should be "on one or more of…".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted ôn an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999

(AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002

do not apply when the reference is a U.S. patent resulting directly or indirectly from an

international application filed before November 29, 2000. Therefore, the prior art date of the

reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA

35 U.S.C. 102(e)).

4.   Claims 1-18 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Aharoni

et al., (hereinafter referred to as "Aharoni").

        Aharoni discloses a method of processing a video signal (Aharoni: figure 11) for

transmission (Aharoni: column 6, lines 60-65) over a heterogeneous network (Aharoni: column

7, lines 24-35), the method comprising the steps of: coding the video in a progressive video

coder (Aharoni: column 8, lines 52-64) so as to generate a progressive video bit stream (Aharoni:

column 9, lines 52-65), wherein the progressive coded video bit stream is configured to be

decodeable at any one of a series of increasing bit rates up to maximum bit rate (Aharoni:

column 10, lines 50-65), depending on which of a number of corresponding portions of the

progressive coded video bit stream area received by a decoder (Aharoni: column 9, lines 25-35),

and wherein each of the series of increasing bit rates produce progressively better reconstructed

quality at an output of the decoder (Aharoni: column 8, lines 1-19); transmitting the progressive

coded video bit stream over a first part of the heterogeneous network at a first one of the bit rates

(Aharoni: column 11, lines 25-44); and selectively transmitting one or more of the portions of the

progressive coded video bit stream from the first part of the heterogeneous network to a second

part of the heterogeneous network (Aharoni: column 6, lines 45-50), the one or more portions

being associated with a second one of the bit rates lower than the first bit rate (Aharoni: column

10, lines 50-64), the one or more portions and the associated second bit rate being selected based

on at least in part on one or more of: an error detected in the transmission over the first part of

the heterogeneous network (Aharoni: column 9, lines 35-67; column 10, lines 1-21); and a

characteristic of the second part of the heterogeneous network (Aharoni: column 12, lines 1-26),

as in claim 1.

Regarding claim 2, Aharoni discloses that the progressive coded video bit stream

corresponds to a given group of frames of the video signal (Aharoni: column 10, lines 20-50), as

in the claim.

Regarding claim 3, Aharoni discloses that each of the corresponding portions is

associated with a different bit rate (Aharoni: column 10, lines 52-60), as in the claim.

Regarding claim 4, Aharoni discloses that a subset of the corresponding portions are

associated with different frame rates (Aharoni: column 7, lines 1-6), as in the claim.

Regarding claim 5, Aharoni discloses that a subset of the corresponding portion are

associated with different spatial resolutions (Aharoni: column 7, lines 1-3), as in the claim.

Regarding claim 6, Aharoni discloses that a subset of the corresponding portions are

associated with different signal-to-noise ratios (Aharoni: column 9, lines 57-67; column 10, lines

1-20), as in the claim.

Regarding claim 7, Aharoni discloses that the particular portions of the progressive coded

video bit stream are received over the first part of the heterogeneous network determine a

corresponding amount of the bit stream that will be transmitted over the second part of the

heterogeneous network to the decoder for decoding a particular one of the series of increasing bit

rates (Aharoni: column 13, lines 10-55), as in the claim.

Regarding claim 8-9, Aharoni discloses that the wired network connection comprises a wired Internet connection (Aharoni: column 6, lines 35-45), as in the claims.

Aharoni discloses an apparatus for use in processing a video signal (Aharoni: figures 1-2), the video signal being coded so as to generate a progressive video bit stream (Aharoni: column 9, lines 52-65), wherein the progressive coded video bit stream is configured to be decodeable at any one of a series of increasing bit rates up to maximum bit rate (Aharoni: column 10, lines 50-65), depending on which of a number of corresponding portions of the progressive coded video bit stream area received by a decoder (Aharoni: column 9, lines 25-35), and wherein each of the series of increasing bit rates produce progressively better reconstructed quality at an output of the decoder (Aharoni: column 8, lines 1-19), the progressive coded video bit stream being transmitted over a first part of the heterogeneous network at a first one of the bit rates (Aharoni: column 11, lines 25-44), the apparatus comprising: a network element coupled between the first part and the second part of the heterogeneous network (Aharoni: column 6, lines 45-55), the network element being operative to selectively transmitting one or more of the portions of the progressive coded video bit stream from the first part of the heterogeneous network to a second part of the heterogeneous network (Aharoni: column 6, lines 45-50), the one or more portions being associated with a second one of the bit rates lower than the first bit rate (Aharoni: column 10, lines 50-64), the one or more portions and the associated second bit rate being selected based on at least in part on one or more of: an error detected in the transmission over the first part of the heterogeneous network (Aharoni: column 9, lines 35-67; column 10, lines 1-21); and a characteristic of the second part of the heterogeneous network (Aharoni: column 12, lines 1-26), as in claim 10.

Regarding claim 11, Aharoni discloses that the progressive coded video bit stream corresponds to a given group of frames of the video signal (Aharoni: column 10, lines 20-50), as in the claim.

Regarding claim 12, Aharoni discloses that each of the corresponding portions is associated with a different bit rate (Aharoni: column 10, lines 52-60), as in the claim.

Regarding claim 13, Aharoni discloses that a subset of the corresponding portions are associated with different frame rates (Aharoni: column 7, lines 1-6), as in the claim.

Regarding claim 14, Aharoni discloses that a subset of the corresponding portion are associated with different spatial resolutions (Aharoni: column 7, lines 1-3), as in the claim.

Regarding claim 15, Aharoni discloses that a subset of the corresponding portions are associated with different signal-to-noise ratios (Aharoni: column 9, lines 57-67; column 10, lines 1-20), as in the claim.

Regarding claim 16, Aharoni discloses that the particular portions of the progressive coded video bit stream are received over the first part of the heterogeneous network determine a corresponding amount of the bit stream that will be transmitted over the second part of the heterogeneous network to the decoder for decoding a particular one of the series of increasing bit rates (Aharoni: column 13, lines 10-55), as in the claim.

Regarding claim 17-18, Aharoni discloses that the wired network connection comprises a wired Internet connection (Aharoni: column 6, lines 35-45), as in the claims.

Aharoni a video transmission system (Aharoni: figures 1-2), comprising: a progressive coder operative to code a video signal so as to generate a progressive video bit stream (Aharoni: column 9, lines 52-65), wherein the progressive coded video bit stream is configured to be

decodeable at any one of a series of increasing bit rates up to maximum bit rate (Aharoni:

column 10, lines 50-65), depending on which of a number of corresponding portions of the

progressive coded video bit stream area received by a decoder (Aharoni: column 9, lines 25-35),

and wherein each of the series of increasing bit rates produce progressively better reconstructed

quality at an output of the decoder (Aharoni: column 8, lines 1-19); a heterogeneous network

comprising at least a first part and a second part (Aharoni: column 7, lines 25-30), the

progressive coded video bit stream being transmitted over a first part of the heterogeneous

network at a first one of the bit rates (Aharoni: column 11, lines 25-44); and a network element

coupled between the first part and the second part of the heterogeneous network (Aharoni:

column 6, lines 45-55), the network element being operative to selectively transmitting one or

more of the portions of the progressive coded video bit stream from the first part of the

heterogeneous network to a second part of the heterogeneous network (Aharoni: column 6, lines

45-50), the one or more portions being associated with a second one of the bit rates lower than

the first bit rate (Aharoni: column 10, lines 50-64), the one or more portions and the associated

second bit rate being selected based on at least in part on one or more of: an error detected in the

transmission over the first part of the heterogeneous network (Aharoni: column 9, lines 35-67;

column 10, lines 1-21); and a characteristic of the second part of the heterogeneous network

(Aharoni: column 12, lines 1-26), as in claim 20.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aharoni et al.,

(hereinafter referred to as "Aharoni") in view of Chou et al., (hereinafter referred to as "Chou").

Aharoni discloses processing a video signal (Aharoni: figures 1-2), the video signal being

coded so as to generate a progressive video bit stream (Aharoni: column 9, lines 52-65), wherein

the progressive coded video bit stream is configured to be decodeable at any one of a series of

increasing bit rates up to maximum bit rate (Aharoni: column 10, lines 50-65), depending on

which of a number of corresponding portions of the progressive coded video bit stream area

received by a decoder (Aharoni: column 9, lines 25-35), and wherein each of the series of

increasing bit rates produce progressively better reconstructed quality at an output of the decoder

(Aharoni: column 8, lines 1-19), the progressive coded video bit stream being transmitted over a

first part of the heterogeneous network at a first one of the bit rates (Aharoni: column 11, lines

25-44); and implementing the step of selectively transmitting one or more of the portions of the

progressive coded video bit stream from the first part of the heterogeneous network to a second

part of the heterogeneous network (Aharoni: column 6, lines 45-50), the one or more portions

being associated with a second one of the bit rates lower than the first bit rate (Aharoni: column

10, lines 50-64), the one or more portions and the associated second bit rate being selected based

on at least in part on one or more of: an error detected in the transmission over the first part of

the heterogeneous network (Aharoni: column 9, lines 35-67; column 10, lines 1-21); and a

characteristic of the second part of the heterogeneous network (Aharoni: column 12, lines 1-26),

as in claim 19. However, even though Aharoni discloses the use of a computing system

(Aharoni: column 7, lines 50-55), it fails to disclose an article of manufacture comprising a

storage medium for storing one or more software programs for use in processing a video signal

for transmission over a heterogeneous network, as in the claim. Chou discloses the well known

methodology of implementing a video processing method by means of software routines stored

on a computer readable medium (Chou: column 6, lines 10-35) in order to allow for video

processing at remote sites (Chou: column 6, lines 40-45). Accordingly, given this teaching it

would have been obvious one of ordinary skill in the art to incorporate Chou's teaching of

software implementation with the Aharoni video processing system in order to allow for

processing at remote sites. The Aharoni video processing system, now being modified to be

implemented by software on a computer readable media as shown in Chou, has all of the features

of claim 19.

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. Li discloses a method of visual progressive coding. Creusere discloses an efficient

embedded image and video compression system using lifted wavelets. Pesquet-Popescu discloses

an encoding method for the compression of a video sequence.

8.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Andy S. Rao whose telephone number is (703)-305-4813. The

examiner can normally be reached on Monday-Friday 8 hours.

       If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chris S. Kelley can be reached on (703)-305-4856. The fax phone numbers for the

organization where this application or proceeding is assigned are (703)-308-6606 for regular

communications and (703)-308-6606 for After Final communications.

· Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703)-305-4700.

Andy S. Rao
Primary Examiner
Art Unit 2613

asr
May 2, 2003